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State of Utah  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
DIVISION OF WATER QUALITY

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March 5, 1992

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DIVISION OF  
OIL GAS & MINING

Mr. Larry Drew  
Manager, Environmental Affairs  
Hecla Mining Company  
6500 Mineral Drive  
Box C-8000  
Coeur d'Alene, ID 83814-1931

Re: Ground Water Permit  
Tailings Pond

Dear Mr. Drew:

The Division of Water Quality (DWQ) has reviewed the various letters and data from Hecla between January 10 to January 14, 1992, most of which were reports and data collected and analyzed by Fox Consultants during the early 1980s, and reports by Grant Schreiber and Associates, a consulting firm from Idaho.

Following our review, it is our opinion that the submitted data does not demonstrate a de minimus potential for a discharge, and as such, our position remains that Hecla must comply with R317-6-6 of the ground water regulations and submit a complete application. The date by which this must be submitted is reestablished at July 1, 1992. As we discussed before, a de minimus determination would normally require that there was an insignificant quantity of waste present, or that the quality of the discharge was at or lower than the ground water standards. With the cyanide concentration higher than 100 mg/kg, high concentrations of lead and other metals, and the quantity of leachable waste present, the tailings pond does not meet this concept.

Our review of the data on the clay liner beneath the pond and of the levee fill shows that although the material was properly compacted and had the proper moisture content when built, the sieve analysis of the material indicates the liner and levee fill had far too much coarse material for use. Many sieved samples contained less than 10% passing the 200 mesh.

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Data on the alluvial material underlying the pond is limited and inconclusive as to its composition. The available screen samples show that in some samples, less than 10% passed the 200 mesh. Table 3-2 in the Grant-Schreiber report lists some permeability values for the alluvium. We assume these values represent vertical permeability and if so, lateral permeability values would be greater. Values of  $10^{-3}$  and  $10^{-4}$  cm/sec are values representative of fine sand; and this type material would readily transmit water.

We can obtain similar results from the Help model by putting in Hecla's data. We do question, however, the actual values used in the Model for the base clay and the underlying alluvium, for reasons described in the above paragraphs. Because of the ponds' contents, questions on the integrity of the pond and the foundation material, and the ponds location adjacent to a major aquifer on the east, we conclude that a permit is justified.

As we discussed during our meeting, the DWQ has required permits for many facilities which were designed for no discharge, using much more certain technologies than exist at the Escalante tailings pond. In addition to reliable information and control on the design, these permitted facilities have all required verification monitoring to insure that performance standards are met.

Performance monitoring, in addition to your closure plan is required for this facility for a ground water permit. As we discussed in our last meeting, we are willing to consider a defined period of time for which monitoring would occur. At this stage of permitting and with the available data, we cannot establish this time period. The monitoring period would be dependent upon the placement of downgradient compliance monitoring points located during the permitting process. This would include hydrogeological information obtained from well drilling such as hydraulic conductivities, etc., which would be used to calculate a time of travel from the pond to the monitoring point. We would like to discuss this with your staff.

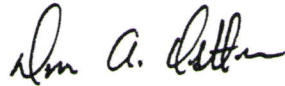
Due to a clean ground water sampling record for past years during operation of the facility, and considering the data Hecla has furnished, we do not foresee any large expense required for collection of data to obtain the permit. The bulk of the information should already be available or easily obtained from monitoring and production wells at the site. Water level maps are available for the aquifer on the east. This information needs to be evaluated before further data is collected. The permit itself will probably require little more than collecting additional water level data from existing wells, the collection of additional water samples and the probable installation of an additional monitoring well downgradient the pond. We recommend that Hecla meet with the ground water permit staff to discuss the application and further needs for data, and other problems and questions Hecla may have before proceeding further.

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If you have questions, please direct your staff or consultants to contact Mack Croft or Larry Mize at 538-6146.

Sincerely,

Utah Water Quality Board



Don A. Ostler, P.E.  
Executive Secretary

Enclosure

DAO:MGC:rkn

cc: **Division of Oil, Gas & Mining**  
Wayne Thomas  
Southwest District Health Dept.  
Bureau of Land Management - Cedar City  
Fred Nelson, Assistant Attorney General

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